

1 What is claimed is:

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3 1. A method for evaluating phase signals for determining an angle or a path
4 of a linearly or rotationally displaced component, whereby

5 - a number (N) of measured phase values (α), produced by scanning at
6 least one phase sensor arrangement on the linearly or rotatably displaced
7 component by means of a sensor assigned thereto are evaluated, and
8 whereby

9 - the measured phase values (α) are transformed mathematically into a new
10 range using a linear transformation, **wherein**

11 - once the measured phase values (α) have been transformed with a matrix
12 (M_1), a quality level (R) is determined by producing a vector (T) followed
13 by the result of a quantization operation (V) regarding the vector (T),
14 **wherein**

15 - after a transformation has been carried out with a further matrix (M_4), a
16 further vector (X) is produced from the difference (t) between the vector
17 (T) and the result of the quantization operation (V), **and wherein**
18 - the minimum value is calculated from the components (x_j) of the other
19 vector (X), and the quality level (R) is derived therefrom.

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21 2. The method as recited in Claim 1,

22 **wherein**

23 - the quality level (R) is determined based on the following relationship:

$$R \cdot e_{\max} = \min_{j=1 \dots n_x} |D_j \pm x_j \cdot C_j|$$

25 - whereby the quantities (C_j) and (D_j) are coefficients that are derivable from
26 the phase signals.

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28 3. The method as recited in Claim 2,

29 **wherein**

1 - the application of the coefficients (C_j) and (D_j) and the transformation of
2 the vector (X) with the further matrix (M_4) are combined in one method
3 step.

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5 4. A circuit arrangement for carrying out a method as recited in one of the
6 preceding Claims,

7 **wherein**

8 - an electronic circuit is provided with a linear mapping module (M1) for
9 processing the phase signals (α) with a matrix (M_1), and with a
10 quantization module (V), and **wherein**
11 - with a linear mapping module (M4), it is possible to produce the other
12 vector (X) from the difference (t) of the vector (T) at the output of the linear
13 mapping module (M1) and the result of the quantization operation (V) at
14 the output of the quantization module (V), it being possible to apply the
15 coefficients (C_j) and (D_j) to said other vector in further modules (C, D).

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